PE1004CF

CAT-5 RECEIVER CARD FOR

PIONEER PLASMA EXPANSION

USER'S GUIDE

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ALTINEX

SIGNAL
MANAGEMENT
SOLUTIONS

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PRECAUTIONS / SAFETY WARNINGS   1

Please read this manual carefully before using your **PE1004CF**. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **PE1004CF** and to prevent fire and shock hazard. Please read them carefully and heed all warnings.

1.1 GENERAL

• There are no user-serviceable parts on this unit. Qualified ALTINEX service personnel must perform all service on the **PE1004CF**.

1.2 INSTALLATION

• To prevent fire or shock, do not expose this unit to rain or moisture. Do not place the **PE1004CF** in direct sunlight, near heaters or heat radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components.

• Handle the **PE1004CF** carefully. Use ESD safety precautions and wear a ground strap when handling the **PE1004CF**.

• Do not pull the cables that are attached to the **PE1004CF.**

1.3 CLEANING

• Unplug the **PE1004CF** before cleaning.

• Clean only with a dry cloth. Never use strong detergents or solvents, such as alcohol or thinner. Do not use a wet cloth or water to clean the unit.

1.4 HANDLING

• Handle the **PE1004CF** carefully. Dropping or jarring can damage the card.

• The **PE1004CF** contains components that are sensitive to electro static discharge (ESD). Always use ESD safety precautions when touching the card.

1.5 FCC / CE NOTICE

• This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

• This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their expense.

• Any changes or modifications to the unit not expressly approved by ALTINEX, Inc. could void the user's authority to operate the equipment.

ABOUT YOUR PE1004CF   2

PE1004CF
CAT-5 RECEIVER CARD FOR PIONEER PLASMA EXPANSION

The **PE1004CF** CAT-5 Receiver Card is designed to receive RGBHV/YPbPr video and audio signals over twisted pair (CAT-5) type cable. The encoded CAT-5 signals are Altinex Standard Audio+ Video signals from a compatible transmitter such as the Altinex DA1930CT. The **PE1004CF** installs directly into the plasma monitor and converts the signals into Pioneer compatible inputs.

The **PE1004CF** has three twisted pair audio+video inputs and one RGBHV input with an accompanying stereo audio input. Additionally, the **PE1004CF** provides a buffered audio and video local output and a CAT-5 distribution output. Any one of the four inputs may be selected at a time. The **PE1004CF** is compatible with video resolutions VGA through UXGA.

The unit offers hardware and software video equalization for transmission lengths up to 400 feet. The video equalization works in conjunction with the video equalization on the transmitter and the quality of CAT-5 cable.

Audio transmitted over the CAT-5 cable is decoded and then output on the audio output jack, as well as distributed on the CAT-5 output. The audio output follows the selected video input line.

The plasma monitor's internal controls allow selection of the **PE1004CF** default inputs, or the **PE1004CF** input to the monitor may be controlled via standard RS-232 communication. Available commands allow input selection to any of the three expansion inputs.

The HelpInside™ feature allows programmers to have access to command structures and control of the **PE1004CF** from any terminal using the [HELP] command. In conjunction with Altinex's unique command structure, HelpInside™ provides easier-than-ever control of the **PE1004CF** CAT-5 Receiver with simple keyboard commands. No typing of long keyboard strings is necessary.

TECHNICAL SPECIFICATIONS   3

FEATURES/ DESCRIPTION	PE1004CF
GENERAL	
Input Connectors	
CAT-5 Video+ Audio	RJ-45-female (3)
Audio, Stereo Unbalanced	3.5mm female (1)
Video, RGBHV	15-pin HD female (1)
RS-232	3-pin terminal block (1)
Output Connectors	
CAT-5 Video+ Audio	RJ-45-female (1)
Audio, Stereo, Unbalanced	3.5mm female (1)
Video, RGBHV	15-pin HD Female (1)
Compatibility	
Video	VGA through UXGA
Audio	Stereo Audio

Table 1. **PE1004CF** General

MECHANICAL	PE1004CF
Panel Material	0.047" Aluminum
Panel Finish	Black
Weight	0.5lb (0.23 kg)
T° Operating	10°C to 35°C
T° Maximum	0°C to 50°C
Humidity	90% non-condensing
MTBF (calc.)	40,000 hrs

Table 2. **PE1004CF** Mechanical

ELECTRICAL	PE1004CF
Inputs	
CAT-5/6 UTP Input	Video/Sync/Audio Signals Altinex Standard
Video, Analog	75 Ohms
Video, Sync	10k Ohms, TTL
Audio, Stereo, Unbalanced	1Vp-p Max
Outputs	
CAT-5/6 UTP Output	Video/Sync/Audio Signals Altinex Standard
Video, Analog	75 Ohms
Video, Sync	75 Ohms, TTL
Audio, Stereo, Unbalanced	1Vp-p Max 75 Ohms or Audio IN
RS-232 Control	9600 Baud ASCII Characters

Table 3. **PE1004CF** Electrical

DESCRIPTION OF PE1004CF   **4**
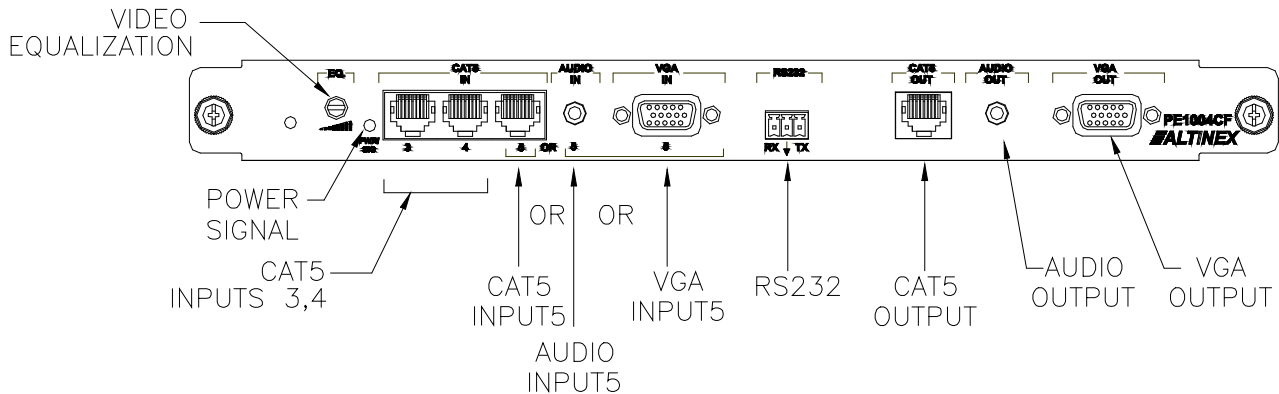
APPLICATION DIAGRAMS   **5**

DIAGRAM 1: INPUT SELECTION

AUTOMATIC INPUT SELECTION

Selecting plasma Input 3 displays PE1004CF CAT-5 #1 Input image on the plasma Input 3.
Selecting plasma Input 4 displays PE1004CF CAT-5 #2 Input image on the plasma Input 4.
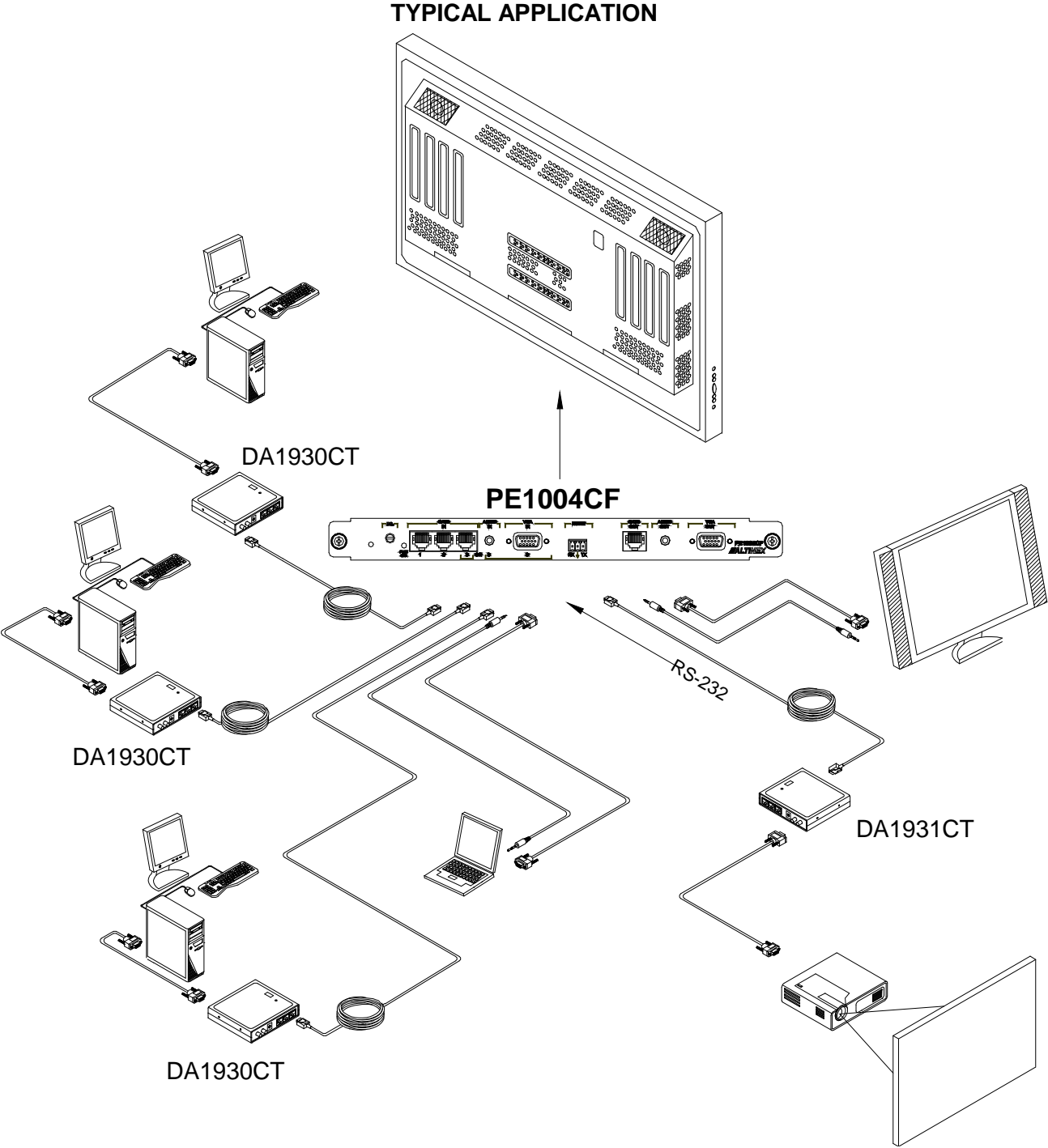Selecting plasma Input 5 displays PE1004CF CAT-5 #3 Input image on the plasma Input 5.

MANUAL INPUT SELECTION

In order to force an input on the **PE1004CF** to a specific expansion input on the plasma monitor, it is necessary to select the desired plasma monitor input number first. Then, use the RS-232 ASCII command, [IN], to switch the **PE1004CF** to its desired input.

View Source From PE1004CF	On Plasma Input No.	Step 1. Select Plasma Input	Step 2. Send to PE1004CF
CAT-5 Input 1	3	3	[IN1]
CAT-5 Input 2	3	3	[IN2]
CAT-5 Input 3	3	3	[IN3]
VGA	3	3	[IN4]
CAT-5 Input 1	4	4	[IN1]
CAT-5 Input 2	4	4	[IN2]
CAT-5 Input 3	4	4	[IN3]
VGA	4	4	[IN4]
CAT-5 Input 1	5	5	[IN1]
CAT-5 Input 2	5	5	[IN2]
CAT-5 Input 3	5	5	[IN3]
VGA	5	5	[IN4]

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SIGNAL MANAGEMENT SOLUTIONS

DIAGRAM 2: TYPICAL SETUP

TYPICAL APPLICATION

DA1930CT

PE1004CF

DA1930CT

RS-232

DA1931CT

DA1930CT

DIAGRAM 3: INTERNAL VIEW

PE1004CF BLOCK DIAGRAM

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SIGNAL
MANAGEMENT
SOLUTIONS
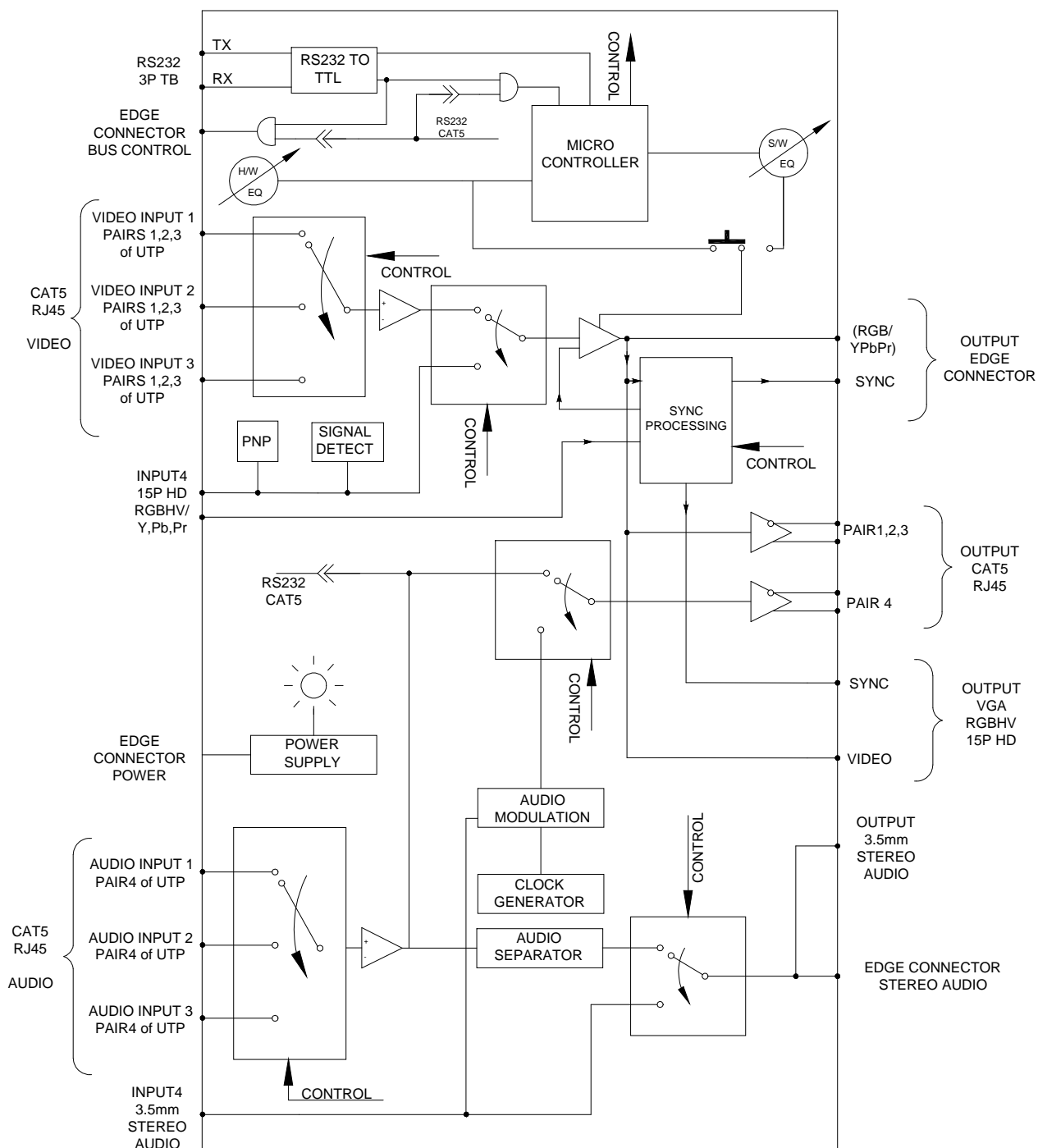
DIAGRAM 4: SWITCH SETTINGS

*VIDEO
EQUALIZATION
HARDWARE CONTROL*
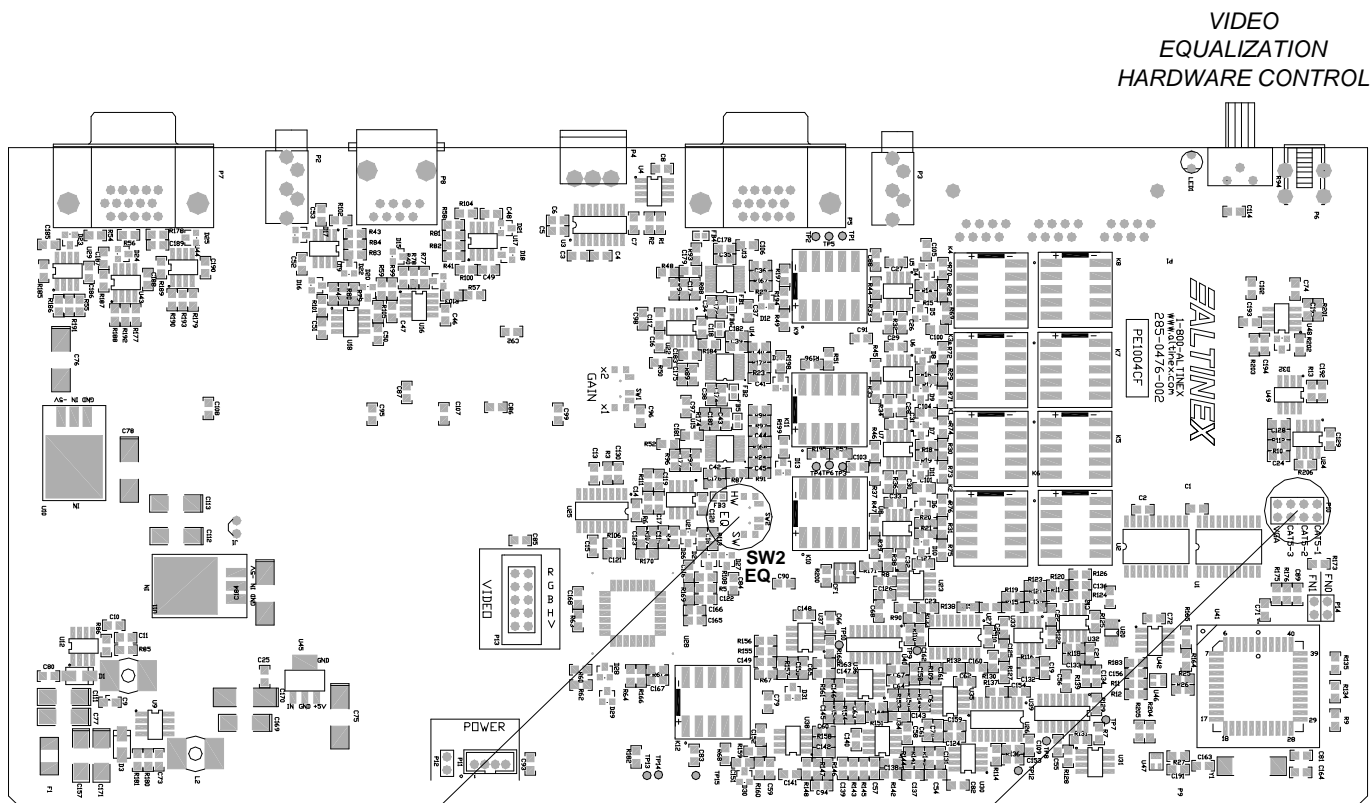
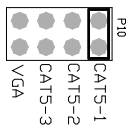**EQUALIZATION**
Set SW2 to the HW position for hardware equalization.
Set SW2 to the SW position for software equalization.

POWER UP DEFAULT
Install the jumper for default input.
In this case, CAT-5 Input #1.

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INSTALLING YOUR PE1004CF 6

Step 1. Use ESD safety precautions and always wear a ground strap when handling the **PE1004CF** expansion card.

Step 2. Prepare the card per the drawing in Diagram 4. Set SW2 for either hardware or software equalization control and set the power up default input. The gain switch should remain in the X1 position.

Step 3. Turn off the power to the plasma display.

Step 4. Remove the card or cover currently installed at the bottom of the display.

Step 5. Carefully, insert the **PE1004CF**. Use the thumb screws to tighten the card.

Step 6. Connect the video output connector of the **PE1004CF** to a local display device with a VGA type cable for RGBHV displays or a YPbPr cable for component video.

Step 7. Connect the audio output connector of the **PE1004CF** to speakers or amplifier using the appropriate audio cable.

Step 8. Connect the CAT-5 inputs to their respective CAT-5 transmitters using standard CAT-5 type cable.

Step 9. If using RS-232 control, connect the RS-232 input connector to the communication port of the PC or other control device. Use AVSnap or other RS-232 communication software. Follow the instructions defined in section 7.3 for the IN command.

Step 10. Turn on power to the plasma display.

Step 11. Plasma display inputs 3, 4 and 5 correspond to **PE1004CF** inputs CAT-5 #1, CAT-5 #2 and CAT-5 #3 respectively. Select input 3 on the plasma display and CAT-5 #1 on the **PE1004CF** will automatically be selected.

Step 12. Adjust the display properties for optimal image quality.

OPERATION 7

7.1 RS-232 CONTROL

The **PE1004CF** has many advanced remote control capabilities which are accessible through standard RS-232 communication. Actual controlling may be achieved using a computer control system or other device capable of sending RS-232 commands.

7.1.1 RS-232 INTERFACE

The RS-232 commands, for the **PE1004CF**, are in a simple ASCII character format.

1. Square brackets "[ ]" are part of the command.
2. Use uppercase letters for all commands.

After processing a command, an "OK" will be returned as feedback if the command is good.

Commands ending in 'S' will be saved into memory. Commands not ending in 'S' will still be executed but will not be restored after the system is powered off.

7.2 DESCRIPTION OF COMMANDS

The default unit ID is zero, but may be set to a value from 0 to 99. In single unit operation, commands may be sent without the unit identifier. Unit ID 0 should be used for single unit operation.

If multiple **PE1004CF**s are connected to the same communication port, the units may be controlled in two different ways: either individually, or more than one simultaneously. In order to control all the units the same way commands may be sent without the unit identifier. Commands sent without the unit identifier will be executed by all **PE1004CF**s.

Example:

[VER]: Executed by all units.
[VERC1]: For Unit ID 1 Only
[VERC2]: For Unit ID 2 Only

Individual control is accomplished by first assigning each unit a unique ID number. Then each unit may be controlled individually by including the unit identifier at the end of each command string.

1. **[SIDn]**

   This command sets the ID number of the unit. The default unit ID is zero.

   Command Format: [SIDn]

   n   = Unit ID (n = # from 0 to 99)

   Example:

   Send the command [SID1] to the system. The unit ID is now one, and "C1" must be included at the end of each command line, as in "[VERC1]", for only the unit with ID1 to respond.

   REMEMBER: A command sent without the unit ID will be executed by all the **PE1004CF**s connected to the RS-232 port.

2. **[RSI]**

   This command resets the unit ID to the default value of zero.

   Command Format: [RSI]

   Example:

   Send the command [RSI] to the system and the new ID will be zero. As unit ID zero, commands may be sent either with or without the unit identifier "C0".

3. **[RSN]**

   This command reads and then displays the ID number of the unit.

   Command Format: [RSN]

   Example:

   The **PE1004CF** was set to an ID value of 3. Send the command [RSN] and the system will return the following feedback:

   PE1004 ID#3

4. **[VER]**

   This command displays the firmware version and model number of the **PE1004CF**.

   Command Format: [VERCi]

   Ci = Unit ID (i = # from 0 to 99)

Example:

Send the command [VER] and receive the following feedback:

PE1004CF 690-0207-001

PE1004CF   = Model Number

690-0207-001   = Firmware Version

5. **[STATUS]**

   This command displays the status of the **PE1004CF** and includes the unit model number, active input and video equalization level.

   Command Format: [Ci]

   Ci = Unit ID (i = # from 0 to 99)

   Example 1: Feedback

   Pioneer Video Card
   IN:1 (CAT-5 # 1)
   Equalization Level:0

   Example 2: Unit ID Specific

   Send the command [STATUSC1] and receive feedback showing the status of Unit ID 1.

   Example 3: Any Unit

   Send the command [STATUS] and receive feedback showing the status of the unit connected to the RS-232 port regardless of its unit ID.

6. **[FRESET]**

   This command is used to preform a factory reset on the unit. The default input, CAT-5 #1, will be selected and all equalization settings will be set to zero, even if they were previoulsy saved using the […S] command.

   Command Format: [FRESETCi]

   Ci = Unit ID (i = # from 0 to 99)

   Example:

   Reset the **PE1004CF** with unit ID 1 to its default settings by sending the command [FRESETC1].

7. **[IN]**

This command is used to select the **PE1004CF** input that will be directed to the plasma display's active expansion input.

Command Format: [INnCi]

n = Input Number (n = 1, 2, 3 or 4)

Ci = Unit ID (i = # from 0 to 99)

Example:

Output the **PE1004C**'s CAT-5 #2 input to the plasma display input number 3. First, set the plasma to expansion input three. Then send the command [IN2] to output the **PE1004CF**'s CAT-5 #2 input to the plasma monitor.

REMEMBER: When an expansion input is selected on the monitor, its corresponding **PE1004CF** input is selected automatically.

8. **[EQn]**

This command is used to set the amount of video equalization when software equalization is selected, and to make it active for adjustments using the [+] and [-] commands.

Command Format: [EQnCi]

n = Equalization amount (n = # from 0 to 254)

Ci = Unit ID (i = # from 0 to 99)

Example:

Set the video equalization level to 150 by sending the command [EQ150].

9. **[EQ]**

This command displays the current level of software equalization and makes it active for adjustments using the [+] and [-] commands.

Command Format: [EQCi]

Ci = Unit ID (i = # from 0 to 99)

Example:

Check the video equalization level to by sending the command [EQ]. The system will return the following feedback for the previous example:

150

10. **[+]**

This command increments a selected property, in this case equalization, to be adjusted using RS-232 control.

Command Format: [+], [+k]

[+] = Increment level by one-step

[+k] = Increment level by 'k' steps

Example:

Select the equalization command by sending the command [EQ]. The current level is 150, but it is not the optimal value. After sending the following commands, an optimum level of 160 is obtained:

1. [EQ]
    The current level is 10.

2. [+][+][+][+][+][+][+][+][+][+] or [**+** 10]
    The level is now 160 and no further adjustments are required.

11. **[-]**

This command decrements a selected property, in this case equalization, to be adjusted using RS-232 control.

Command Format: [-], [-k]

 [-] = Decrement level by one-step

[-k] = Decrement level by 'k' steps

Example:

Select the equalization command by sending the command [EQ]. The current level is 160, but it is not the optimal value. After sending the following commands, an optimum level of 140 is obtained:

1. [EQ]
    The current level is 160.

2. [−] [−] [−] … [−] or [− 20]
    The level is now 140 and is no further adjustments are required.

12. **[…S]**

This command will save the configuration command being sent to the **PE1004CF** into its nonvolatile memory.

Example: Equalization

If Input 4 is currently the active input, send the command [EQ100S] to save the equalization value of 100 for this input. After power up, the equalization for Input 4 will be set to 100.

13. **[HELP]**

This command displays information available for the Multi-Tasker interface commands.

Command Format: [HELPCi]

Ci = Unit ID (i = # from 0 to 99)

Example:

In order to display the RS-232 commands available for the **PE1004CF,** send the command [HELP]. The commands, along with a brief description, will be displayed in the terminal window.

7.3 SUMMARY OF COMMANDS

1) **[SIDn]** **Set ID number of the unit.**

2) **[RSI]** **Reset ID of the unit to 0.**

3) **[RSN]** **Return unit ID number.**

4) **[VER]** **Display firmware version.**

5) **[STATUS]** **Display current status.**

6) **[FRESET]** **Perform factory reset.**

7) **[IN]** **PE1004CF Input select.**

8) **[EQn]** **Set video equalization.**

9) **[EQ]** **Show software equalization.**

10) **[+]** **Increment active property.**

11) **[-]** **Decrement active property.**

12) **[…S]** **Save one parameter.**

13) **[HELP]** **Display RS-232 commands.**

We have carefully tested and have found no problems in the supplied **PE1004CF**. However, we would like to offer suggestions for the following:

8.1 NO DISPLAY

Cause 1: The source has a problem.
Solution: Check the source and make sure that there is a signal present and all source connections are correct. If the source is working and there is still no display, see Cause 2.

Cause 2: The correct input is not selected.
Solution: Select the input using the default jumper or RS-232 bus. (See RS-232 accessible commands in Section 7). If no display is present, see Cause 3.

Cause 3: Cable connections are incorrect.
Solution: Make sure that cables are properly connected. Also, make sure that the continuity and wiring are good. If there is still no display present, see Cause 4.

Cause 4: The display has a problem.
Solution: Make sure the display has power and is turned on. If there is still no display, please call Altinex at (714)-990-2300.

8.2 NO SOUND

Cause 1: The source has a problem.
Solution: Check the source and make sure that it is working at an appropriate volume level and all source connections are correct. If the source is working and there is still no sound, see Cause 2.

Cause 2: The wrong input is selected.
Solution: Select the video input that corresponds to the audio input. If no sound is present, see Cause 3.

Cause 3: Cable connections are incorrect.

Solution: Make sure that the cables are connected properly. Also, make sure that the continuity and wiring are good. If there is still no sound present, see Cause 4.

Cause 4: Destination amplifier has a problem.

Solution 1: Make sure that the destination amplifier is powered. If there is still no sound, see Solution 2

Solution 2: Set the volume of the destination amplifier to a reasonable level. If there is still no sound, call ALTINEX at (714) 990-2300.

ALTINEX POLICY   9

9.1 LIMITED WARRANTY/RETURN POLICY

Please see the Altinex website at www.altinex.com for details on warranty and return policy.

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